**Reflective Journal Template for Lab Assignment**

**Lab 02: Introduction to Deep Learning with VGG16**

**Submitter Name: Parnal Sinha**

**Course: ITAI2376**

### ****1. Introduction (10 Minutes)****

**Task Completed**: Read the introduction to deep learning basics.

**Reflection**:

1. What were the key concepts discussed in the introduction?
2. How does this lab differ from traditional coding-based deep learning labs?
3. What questions did the introduction raise about the workflow of deep learning?

### ****2. Overview of the Pre-built Model (15 Minutes)****

**Task Completed**: Explored the VGG16 model architecture.

**Reflection**:

1. Describe the structure of the VGG16 model (e.g., layers, parameters).
2. What role do convolutional layers play in the model?
3. How does pre-training on ImageNet help the model perform new tasks?

### ****3. Data Loading and Preprocessing (15 Minutes)****

**Task Completed**: Observed data preprocessing steps (e.g., resizing, normalization).

**Reflection**:

1. Why is preprocessing critical for deep learning models like VGG16?
2. What specific transformations (e.g., scaling, mean subtraction) were applied to the images?
3. How might poor preprocessing affect the model’s predictions?

### ****4. Making Predictions (20 Minutes)****

**Task Completed**: Uploaded an image and viewed model predictions.

**Reflection**:

1. What image did you upload, and what were the top 3 predictions?
2. Did the model’s predictions align with your expectations? Why or why not?
3. How does the model handle images outside the ImageNet classes?

### ****5. Understanding Predictions (20 Minutes)****

**Task Completed**: Tested image modifications (rotation, noise) and observed prediction changes.

**Reflection**:

1. How did rotating the image affect the model’s confidence in its predictions?
2. What happened when you added noise to the image? Did the model fail catastrophically?
3. What does this tell you about the model’s sensitivity to input variations?

### ****6. Conclusion and Discussion (15 Minutes)****

**Task Completed**: Reflected on the lab’s conclusion and answered discussion questions.

**Reflection**:

1. What is the biggest takeaway from this lab?
2. How do data preprocessing, model architecture, and interpretability fit into real-world AI projects?
3. What ethical considerations arise when using pre-trained models like VGG16?

### ****7. Feedback and Assessment (15 Minutes)****

**Feedback**:

1. What part of the lab was most engaging? What was confusing or unclear?
2. How could the lab be improved (e.g., additional widgets, clearer instructions)?
3. Rate your confidence in explaining deep learning workflows after this lab (1–10).

**Self-Assessment**:

1. I interacted with all widgets and observed outputs: ☐ Yes ☐ No
2. I understand the role of preprocessing in deep learning: ☐ Yes ☐ Partially ☐ No
3. I can explain how VGG16 makes predictions: ☐ Yes ☐ Partially ☐ No

**Submission Checklist**:

1. Journal includes reflections for all 7 sections.
2. Filename: L02\_Submitter\_Name\_ITAI2376.
3. Saved as PDF or DOCX and submitted to the designated platform.

**Note**: Replace placeholder text ([Your Name]) with your actual name and ensure all checkboxes are marked before submission.